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FM 55-8

FIELD MANUAL DEPARTMENT OF THE ARMY
No. 55-8 WASHINGTON 25, D.C., *12 Oct. 1956*

TRANSPORTATION INTELLIGENCE

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CHAPTER 1

GENERAL

1. Purpose

This manual sets forth the responsibilities, doctrine, and procedures for the collection, production, and dissemination of transportation intelligence.

2. Scope

The responsibilities and functions of transportation officers, transportation staff sections, and transportation units with regard to transportation intelligence are explained. The organization for collection and production of transportation intelligence is discussed. Procedures described herein are in accord with accepted Department of the Army doctrine and apply to all echelons of command. (Reference is made to FM 30–16 for overall responsibilities and organization for the production of technical intelligence.) Fundamentals concerning direction of the collection effort, collection of information, and production, dissemination, maintenance, and use of transportation intelligence are listed. Standing Transportation Information Requirements for highways, railways, ports and beaches, inland waterways, and Army-type aviation are outlined and sample field collection reports based on these requirements are

shown. An appendix giving definitions of technical transportation terms and illustrations of transportation facilities and equipment is included.

3. Definition and Role of Transportation Intelligence

a. Definition. Transportation intelligence is intelligence concerning air, land, and water transportation systems and facilities of actual or potential theaters of operations. It includes data concerning the characteristics, condition, development, organization, materiel, operation, maintenance, and construction of such facilities.

b. Role. Transportation intelligence provides data essential to strategic, tactical, and logistical planning and furnishes the basis for estimates of military transportation capacities and capabilities.

c. Function. Transportation intelligence includes detailed consideration of specific technical features of the various modes of transportation and their related facilities. These features have technological interest, of both direct and indirect nature, to the Department of Defense and other governmental agencies, including CONUS and oversea commands. Stress, therefore, is placed on the necessity for maintaining a continuing and energetic system of transportation intelligence liaison and collaboration with other staffs, units, and agencies, under the supervision and within the policies of the Assistant Chief of Staff, Intelligence, at the appropriate staff level. The ultimate objective is the accurate documentation, analysis, and evaluation of data concerning transportation systems in actual and potential theaters of operations.

CHAPTER 2

TRANSPORTATION INTELLIGENCE RESPONSIBILITIES

4. General

The collection of transportation information and the production and dissemination of transportation intelligence are command responsibilities. Certain functions related to those responsibilities normally are delegated to the transportation officer. In this text, the term "transportation officer" refers to the transportation special staff officer at each level of command outside the continental United States, including the assistant G4 for transportation of combat divisions. Other agencies, including G2's of all commands, and elements of the Navy, Air Force, State Department, Central Intelligence Agency, and the technical services, also collect, report, and process transportation intelligence information. In carrying out these responsibilities, there may be unnecessary duplication of effort unless coordination is effected between the agencies concerned. G2's, at all echelons, are responsible for such technical intelligence liaison as may be required for coordination with non-Army agencies, civil, military, domestic, and foreign, and will be the initial point of contact for these purposes. In addition, it is the responsi-

bility of the G2 at each echelon to insure an integrated and coordinated collection effort by all technical intelligence agencies including the technical services operating within the command.

5. Individual Responsibilities

a. Assistant Chief of Staff, Intelligence. The Assistant Chief of Staff, Intelligence, at Department of the Army level and G2's at lower echelons of command, with the assistance of technical service special staff officers, evaluate and interpret intelligence in relation to given operational situations to determine the capabilities and probable courses of action of hostile military forces. Field Manual 30–16 specifies the responsibilities of the Assistant Chief of Staff, Intelligence and the technical services with regard to technical intelligence concerning foreign facilities and materiel usable for military operations.

b. Chief of Transportation. The Chief of Transportation is responsible for—

(1) Producing and maintaining information and intelligence peculiar to the military planning and operational needs of the Transportation Corps, and for the Assistant Chief of Staff, Intelligence, Department of the Army, and other Government agencies, as needed, including intelligence concerning—

(*a*) The operating characteristics, condition, capacity, military transport capabilities, and potentials of foreign railways, highways, inland waterways, and water terminals.

(*b*) The characteristics, performance, operational capabilities, and limitations of foreign transportation equipment, including rotary- and light fixed-wing aircraft, and related military organizations, installations, technical and scientific personnel, and techniques.

(2) Insuring that facilities and appropriate programs of instruction are provided for the general and specialized transportation intelligence training of Transportation Corps personnel and units. (FM 30–16 lists subjects to be covered in intelligence training. Methods of intelligence training are prescribed in FM 21–5, FM 30–5, FM 30–101, FM 30–102, FM 30–103, and FM 30–104. The responsibilities of the Chief of Transportation with regard to technical intelligence training are stated in FM 30–16.)

(3) Performing the intelligence functions common to the chiefs of all technical services (FM 30–16).

c. Chief of Engineers.

(1) The Chief of Engineers is responsible for mapping and geodesy to delineate location, identity, and physical description of all natural, cultural, and military features on the surface of foreign geo-

graphical regions, and terrain analysis to determine the effect of these same features on military operations, including the influence of climate and weather, hydrology, and geology.

(2) The Chief of Engineers is responsible for intelligence on the physical engineering characteristics and conditions required for the maintenance, construction, reconstruction, and demolishing of air, land, and water transportation systems.

d. Chief Signal Officer. The Chief Signal Officer is responsible for the production and maintenance of intelligence information concerning telecommunications equipment and facilities used for control of traffic by rail, air, highways, waterways, and within ports. However, communications systems which are installed and operated exclusively for railway operational use are normally treated from an intelligence point of view as a part of the railway system. Detail guidance for the collection of this information is furnished in DA Pam 30–100.

e. Transportation Officer.

(1) The transportation officer provides for the transportation intelligence training required to qualify intelligence personnel under his control for performance of their duties. To assist in establishing a continuing and thorough intelligence information collection effort, the transportation officer implements procedures

to insure coordination and collaboration with other agencies on technical intelligence training, techniques, guides, manuals, and other intelligence matters.

(2) The transportation officer provides technical supervision and coordination of intelligence activities of transportation staff sections and transportation units of subordinate headquarters and gives assistance when possible.

(3) Specific intelligence responsibilities of the transportation officer are outlined in FM 30–16.

f. Transportation Intelligence Officer.

(1) This officer performs the intelligence staff function on the transportation officer's staff. He assists in the preparation of, and carries out, the transportation officer's intelligence plan and elements of plans prescribed by G2.

(2) The transportation intelligence officer trains his own section or unit in intelligence functions and insures appropriate technical training in transportation subjects. Normally, he is delegated the responsibility for technical supervision of transportation intelligence training in staff sections and units of subordinate headquarters. He collaborates with the operations officer in the preparation of training programs.

g. Transportation Corps Units and Staffs. Elements of transportation special staff sections and transportation operating units make known to the transportation intelligence officer their current and anticipated intelligence needs. They transmit to the transportation intelligence officer any available operational planning information of the type discussed in this manual. This latter responsibility includes the prompt reporting and/or submission of any foreign transportation documents or captured transportation equipment which may come into their possession or of which they have knowledge.

h. Other Transportation Corps Personnel. All transportation personnel must make known to their own commander or the commander of the nearest Army unit any information concerning enemy transportation systems, facilities, or materiel. Documents and any new or unusual items of equipment will be turned in or reported and properly safeguarded until transfer is accomplished. There must be a continuing effort by personnel in all headquarters and units to collect and report all types of transportation information of intelligence value within their areas of operation.

i. Transportation Corps Unit Commanders. Each Transportation Corps unit commander should insure that all personnel under his command know and understand their intelligence duties. Information given to unit commanders as described in *h* above will be forwarded to the nearest transportation officer without delay. Captured enemy transportation materiel will be processed in accordance with FM 30–16. Transportation operational data and documents of intelligence value will be transmitted to the appropriate transportation intelligence officer in accordance with policies outlined in FM 30–16.

CHAPTER 3

TRANSPORTATION INTELLIGENCE ORGANIZATION

6. General

Army-wide organization for the collection, production, and dissemination of technical intelligence concerning foreign facilities and materiel is prescribed in FM 30–16. This chapter discusses Transportation Corps organizational elements concerned directly with transportation intelligence activities in oversea areas. Organization within a theater of operations is shown in figure 1. The chain of command follows a similar pattern in noncombat oversea commands.

7. Transportation Special Staff Sections

The transportation special staff sections in oversea commands normally include a plans and intelligence division. This division contains an intelligence branch which is organized to carry out the intelligence duties and responsibilities of the transportation officer as defined in FM 30–16 and FM 101–5.

8. Division Transportation Officer

The assistant G4 for transportation in the infantry, armored, and airborne divisions has the same intelligence functions as transportation offi-

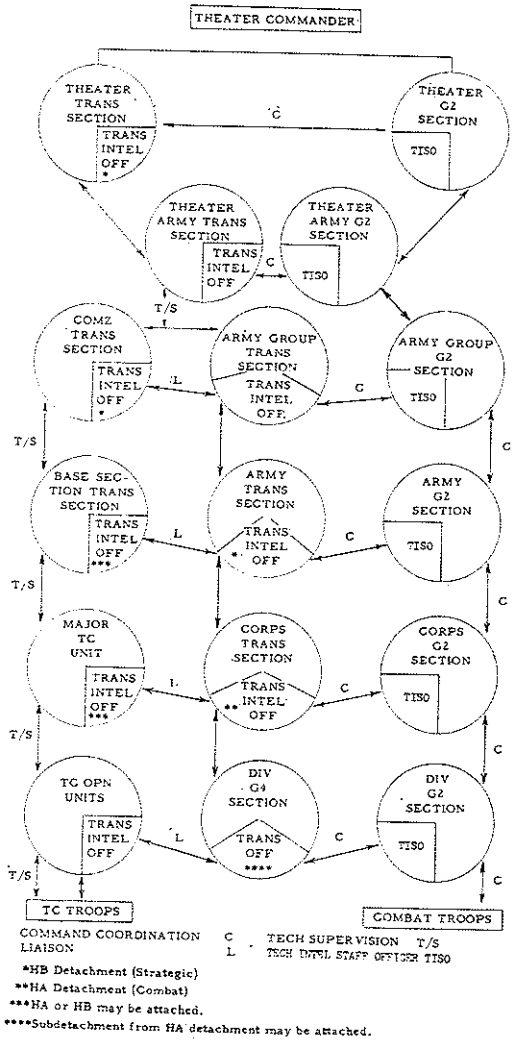

Figure 1. Typical transportation intelligence organization within a theater of operations.

cers of higher echelons, subject to such modifications as may be directed by the division commander.

9. Transportation Intelligence Detachments

a. There are two types of Transportation Corps intelligence detachments: transportation intelligence detachment (combat), team HA, consisting of two officers and four enlisted men, assigned to each corps as required; and transportation intelligence detachment (strategic), team HB, consisting of four officers and four enlisted men, one or more teams allotted to theater, army, and communications zone headquarters. Team HA is organized to provide a subteam of one officer and two enlisted men per front line division when desired. Detachments of either type may be attached to other units or staffs when required.

b. Under the general staff direction and supervision of G2, the transportation officer is responsible for the accomplishment of the assigned mission of the Transportation Intelligence Detachments. In some instances these detachments may be the only source of specially trained transportation intelligence personnel available to the command. They are capable of assisting the transportation officer in all phases of his intelligence responsibilities. They may comprise his intelligence staff and be used in the collection of transportation information and/or the production and maintenance of transportation intelligence. Both type detachments are capable of collecting, processing, maintaining, and disseminating technical information and intelligence concerning foreign trans-

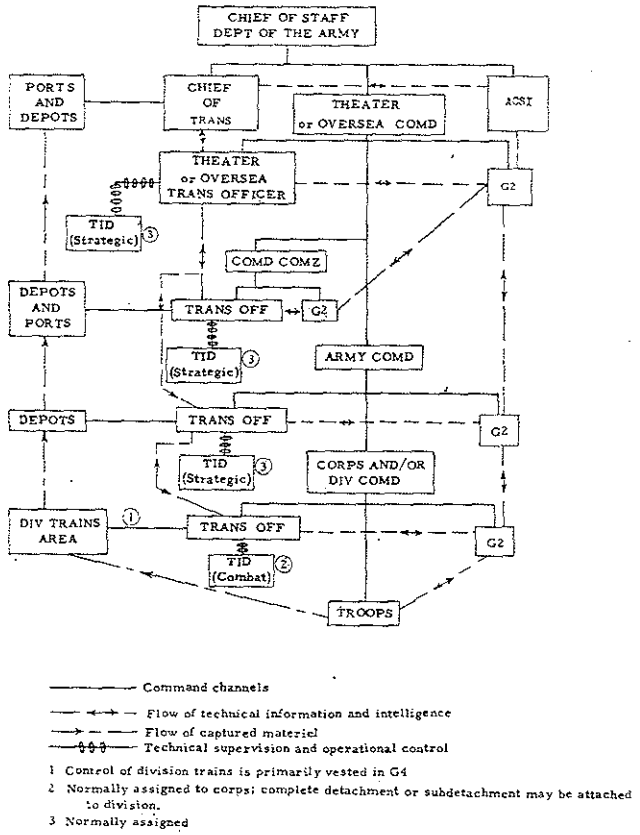

Figure 2. Chain of command, channels of technical supervision, and flow of Transportation Corps intelligence information and materiel.

portation systems, operational facilities, resources, and operations—including data concerning routes, materiel, logistics, and installations—for transportation intelligence and logistical planning purposes; of selecting, processing, and expediting the flow of foreign transportation materiel (fig. 2) required for intelligence exploitation; and of maintaining intelligence liaison with transportation, engineer, signal, and other units and staff elements.

CHAPTER 4

TRANSPORTATION INTELLIGENCE OPERATIONS

Section 1. COORDINATION AND LIAISON

10. General

Transportation intelligence activities at each level of command will be coordinated with G2 or other agencies, through the appropriate transportation intelligence officer, in accordance with doctrine and procedures prescribed in FM 30–16.

11. Coordination and Liaison at Various Echelons

a. Coordination must be maintained between the transportation intelligence officer, the plans officer, and other elements of the transportation section to insure timely determination of essential elements of information and the systematic collection and processing of transportation information for logistical planning purposes.

b. Continuing liaison must be maintained with the intelligence elements of transportation staff sections of higher and subordinate headquarters. This will aid in the establishment of clearly defined objectives, eliminate unnecessary duplication, and provide for determination of the best methods of implementation so that current and

complete transportation intelligence will be available at all levels of command.

c. Continuing liaison for the purposes outlined in *a* and *b* above should be established between communications zone transportation sections, between their counterparts in army commands, and between adjacent commands.

d. Close liaison will be established with other special staff sections, particularly with the engineer section, whose intelligence interests are directly identified with transportation intelligence collection and processing missions. This will insure mutual discussion of collection problems, insure interchange and utilization of available and pertinent information, and minimize duplication of effort.

e. Systematic and continuing liaison and coordination will be established with the intelligence elements of the Navy, Air Force, and allied forces through the Assistant Chief of Staff, Intelligence (FM 30–16).

Section II. DIRECTION OF THE COLLECTION EFFORT

12. General

Direction of the collection effort involves five important procedures: determination of requirements for information, check of information available from other offices and agencies, issuance of orders and requests for the collection of required information, evaluation of collection reports, and issuance of new instructions to collecting agencies. Guidance must be provided collecting agencies concerning specific transportation information needed; time limitations, when applicable, priorities of requirements; and means by which agencies can improve their transportation information collection effort. Collection agencies will be advised of changing priorities and completion of specific requirements to preclude unnecessary collection effort. Direction and supervision of these activities is the responsibility of the G2 at each level of command.

13. Determination of Requirements

a. Specific Requirements. Specific guidance in the collection of transportation intelligence information is furnished through the following media:

(1) The transportation sections of chapter 3, National Intelligence Survey, contain the available data on major transportation facilities and principal routes in foreign areas. Transportation information gaps and deficiencies are indicated. This publication is available at theater and oversea command headquarters to meet initial wartime and peacetime military transportation planning and operational needs. Transportation officers and unit commanders direct their transportation intelligence collection and production effort at supplementing this initial intelligence for their subsequent planning and operational needs.

(2) Analysis of transportation plans, annexes, and special transportation capability studies prepared by transporta-

tion personnel at various levels of command furnish guidance for determining intelligence requirements. During the preparation of such plans and studies, a listing of intelligence gaps and deficiencies is developed for submission to the transportation intelligence officer who initiates appropriate collection effort.

(3) Requirements as specified by G2, transportation staff planners, transportation units, and others.

b. General Requirements. Personnel in all headquarters and units should collect and report all types of transportation information of planning and intelligence value within their areas of operations (par. 5*g-i*). Standing Transportation Information Requirements (apps. II–VI) provide a guide for personnel collecting transportation information not covered by specific local requirements. Requirements pertaining to highways, railroads, ports and beaches, inland waterways, and Army type aviation are included in appendixes II through VI.

c. Implementation and Guidance. The transportation intelligence officer at each level of command assembles transportation intelligence requirements of his own and other headquarters, analyzes them, and incorporates them into his collection plan (par. 15). Requests are made to appropriate collecting agencies. The transportation intelligence officer furnishes continuous guidance to collecting agencies as required, through appropriate channels.

Section III.
TRANSPORTATION INFORMATION COLLECTION

14. Scope

The scope of collection embraces all pertinent information concerning the various modes of transportation (apps. II–VI). It includes transportation intelligence coverage of foreign areas under the control of our own, friendly, and hostile military forces. Complete, comprehensive coverage is desired. Collection continues throughout peacetime and periods of hostilities. Every effort is made to collect, report, and compile all basic transportation information of value for present and future military planning purposes.

15. Collection Plan

After requirements have been determined (pars. 12 and 13), each transportation intelligence officer prepares a collection plan. Its purpose is to insure a systematic exploitation of all sources, by all means, within the time specified to fulfill requirements. The plan may be in any convenient form, usually tabular (FM 30–5).

16. Collection Agencies

Collection agencies include the intelligence branch of the transportation special staff section, transportation intelligence detachments, and other transportation units. Transportation units or personnel may be assigned special collection or reporting tasks. All transportation personnel are potential collectors of transportation information (par. 5*h*). Transportation information also is collected by the agencies listed in FM 30–5 and FM

30–16, including G2 of all commands; the intelligence elements of various technical services, particularly the Corps of Engineers; Naval Intelligence; Air Force Intelligence, and numerous other agencies.

17. Sources of Information

A source is the person, thing, action, or condition from which desired information is obtained. Sources listed in this paragraph are those used by the transportation officer or his assistants and include agencies or persons which themselves may be collecting agencies. (See FM 30–16 for further discussion of information sources.) Principal sources are—

a. Personnel of the following categories:

(1) Other technical services.
(2) Civil authorities.
(3) Representatives of contracting and engineering firms, export-import firms, manufacturers, suppliers, airlines and steamship lines, public utilities, and other agencies concerned with transportation.
(4) Transportation personnel.
(5) Captured enemy personnel, deserters, defectors, and repatriates.
(6) G2 personnel.

b. Documents, including written, printed, engraved, and photographic material. Documents may be acquired individually or from our own, other, or captured libraries or depositories. All documents pertaining to transportation subjects are worth reporting. Appendixes II through VI list examples of documents pertinent to each field of transportation interest.

c. Transportation equipment and materiel (trucks, rail cars, helicopters, barges).

d. Transportation facilities (railways, highways, water terminals, inland waterways, and Army-type aviation).

18. Procedure for Intelligence Exploitation of Transportation Facilities

Exploitation of transportation facilities requires detailed prior planning. Such planning is coordinated with the Assistant Chief of Staff, Intelligence and other agencies and must insure exploitation of the pertinent items listed in appendixes II through VI. Transportation facilities which are overrun during combat should be examined without delay and detailed reports furnished through technical service and Assistant Chief of Staff, Intelligence channels. In view of collateral interests of the Corps of Engineers and the Transportation Corps, such exploitation is most effective if made jointly. In order to do this, sufficient trained transportation intelligence personnel and/or technically qualified transportation specialists should be made available to the combat unit (division or corps) operating in the area of the facility. Such augmentation should be made sufficiently in advance to permit complete orientation concerning the facility and the desired exploitation. At least one complete copy, preferably two, of all resultant basic documents, maps, and diagrams should be forwarded to the theater transportation officer.

19. Methods of Collection

There are three general methods of collecting transportation intelligence information: research, observation, and interrogation of a source.

a. Transportation Corps personnel must be continually alert to observe and report everything of intelligence value. In addition to this informal observation, personnel charged with collection responsibilities make planned reconnaissance trips, coordinating with G2 and other agencies when appropriate.

b. Maximum use should be made of ground and aerial photography. Photographic service is provided by the Signal Corps. In the field army, photographic units are located at division, corps, and army levels. In the continental United States, pictorial service is furnished by Signal Corps photographic laboratories strategically located within each continental army area. Collectors should plan photographic coverage so as to insure that full transportation intelligence value will be obtained. Whenever possible, all scenes and objects should be photographed from several angles and photographs annotated and amply referenced. Figure 6 is an example of a photograph taken from a location and angle calculated to show the most important features of the object photographed. It is important that distances and dimensions be indicated by inclusion of people, vehicles, and objects of known size in photographs when possible.

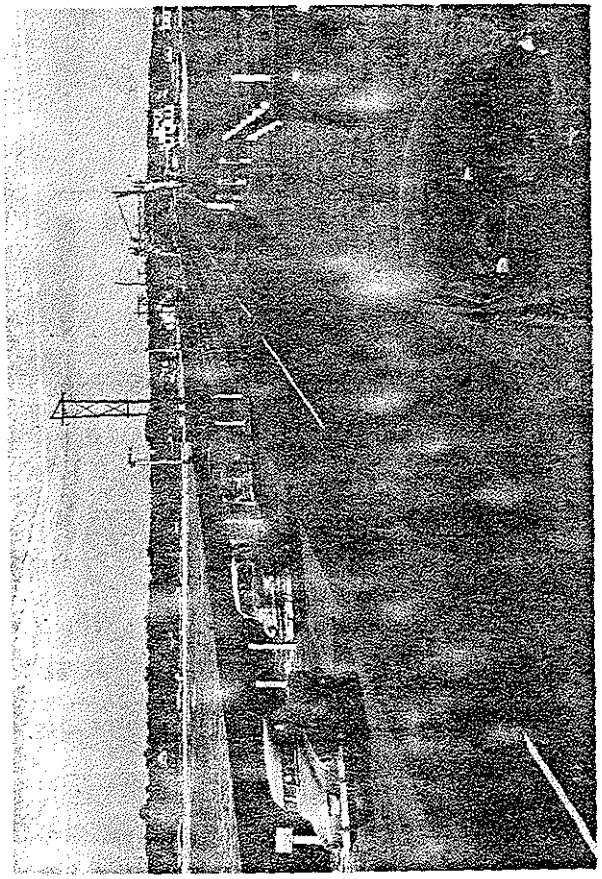

Figure 8. Sample photograph—highway, waterway, and rail.

c. Techniques of interrogating sources and examining documents are discussed in FM 30–15. Procedures for examining materiel are described in FM 30–16.

20. Reporting

Reporting is a vital step in the collection process. It is imperative that reports be accurate, clear, concise, timely, and complete. Reports should conform to the examples illustrated in appendixes II through VI. Whenever practicable, they should be supplemented by written reports which include operational experience data and basic operating documents. All available documents (par. 17) should be appended to each report or reference made to their location and availability.

21. Evaluation Rating

Each intelligence report and each piece of reported information should be given an evaluation rating (FM 30–5) by the collecting agency. This evaluation indicates to the next user of the information the credibility and reliability of the source and of the information itself. Source of information and date should be given whenever possible.

Section IV.
PROCESSING TRANSPORTATION INFORMATION

22. General

Processing is the transformation of information into intelligence by recording, evaluation, analysis, integration, and interpretation. The transportation officer produces and maintains

transportation intelligence required for use within his headquarters. He also prepares and maintains such additional transportation intelligence as may be directed by higher headquarters to include maintenance of files of special transportation studies, and sections of the National Intelligence Survey which concern transportation within his area of operations.

23. Steps in Processing

a. Recording. Recording is the systematic selection, sorting, grouping, cataloging, and filing of information so that items of particular categories may be grouped conveniently for study and reporting. Recording methods are discussed in FM 30–5.

b. Evaluation. Each processor will evaluate items of information to determine their pertinence, inherent meaning, probable accuracy, and credibility of source. Such evaluation is essential because in many instances the processing agency will have information affecting credibility and reliability which is not available to the collection agency which made the previous evaluation. The processor will assign his own evaluation rating (par. 21) to each item of intelligence prior to its dissemination.

c. Analysis. Analysis is the separation of information concerning the same or related subjects into basic elements and the critical comparison of these elements in order to establish the relationship of each.

d. Integration. Integration is the combination

of basic elements into a logical and reasonable pattern.

e. Interpretation. Interpretation is the act of judging the results of integration in the light of previously acquired knowledge and experience and indicating the significance of such results in terms of capabilities, limitations, and courses of action.

24. Maintenance

Maintenance of intelligence involves continuing liaison with all pertinent agencies, including operating units, reconnaissance and field trips, collection of new documents, reexamination of personnel and materiel, and examination of other personnel and materiel necessary to insure that the intelligence is current in all respects.

Section V.
DISSEMINATION OF TRANSPORTATION INTELLIGENCE

25. Objectives

The primary objective of dissemination is to place intelligence in the hands of the ultimate user early enough to permit timely formulation of capability estimates and operational plans. Intelligence required by particular transportation sections or units is disseminated to them through technical channels. Exchange of intelligence with intelligence agencies of other branches and services is accomplished through the G2 of the command.

26. Methods

Transportation intelligence may be disseminated by any of the means outlined in FM 30–5, FM 30–16, and FM 101–5. Figure 4 illustrates some of the common agencies of dissemination, and important uses of transportation intelligence. Three other principal means of dissemination are—

a. National Intelligence Survey. Transportation sections of the National Intelligence Survey contain intelligence concerning railways, highways, water terminals, inland waterways, and Army-type aviation produced by the Office of the Chief of Transportation in coordination with the Corps of Engineers and Office of Naval Intelligence. Intelligence concerning pipelines, airfields, and other items of transportation interest, for which production responsibility is assigned to other Department of Defense agencies, is also included in the Survey.

b. Special Transportation Studies. Special transportation studies concerning railways, highways, water terminals, inland waterways, and Army-type aviation prepared by the Office of the Chief of Transportation and in the field are given limited distribution. These studies are analyses of basic transportation facilities and resources as they relate to given operational situations in actual or potential areas of military operations. Transportation studies prepared by theaters and armies, while encompassing smaller areas, normally contain more detailed and up-to-date information on specific routes and modes.

c. Transportation Intelligence Summary. Periodic summaries of current transportation intelligence are prepared by transportation special staff

sections. Such summaries are disseminated to the Assistant Chief of Staff, Intelligence; to transportation staffs of higher, lower, and adjacent headquarters; and to other interested agencies as authorized by the Assistant Chief of Staff, Intelligence.

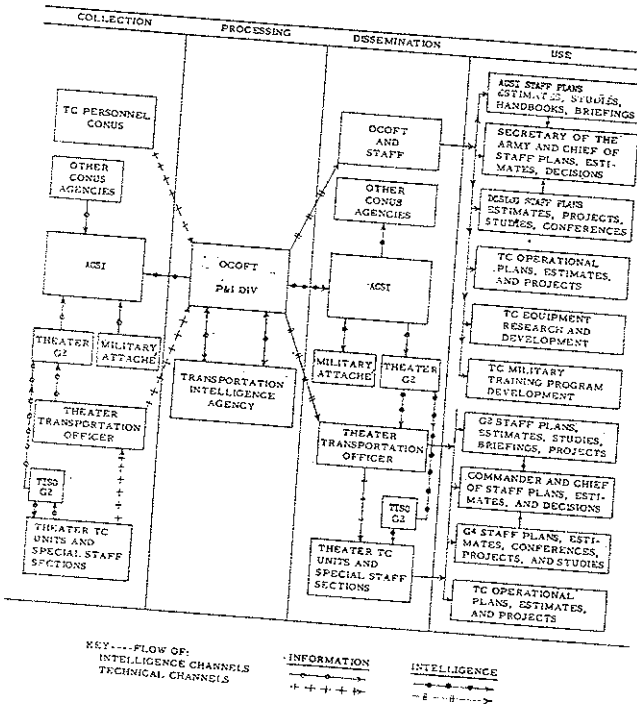

Figure 4. Production and use of transportation intelligence.

Section VI.

TRANSPORTATION INTELLIGENCE UTILIZATION

27. Strategic Logistical Planning

Intelligence concerning transportation modes, systems, facilities, and materiel is an essential element in the formulation of strategic plans. Transportation Corps personnel concerned with transportation planning and intelligence activities utilize transportation intelligence to determine the capabilities, vulnerabilities, and probable uses of transportation facilities by the enemy, as well as the capacities, capabilities, and potentialities of foreign transportation facilities for use by our own and friendly military forces.

28. Tactical Planning

Transportation intelligence developed in peacetime is essential for the initial use of the commander who must plan tactical operations. During hostilities, the production and maintenance of transportation intelligence is of vital importance in assisting the commander to fulfill his combat mission.

29. Research and Development

Transportation intelligence provides data on facilities and materiel which assist in transportation research and development.

APPENDIX I

REFERENCES

1. Field Manuals

	FM 5–10	Routes of Communications.
	FM 5–36	Route Reconnaissance and Classification.
	FM 11–30	Signal Corps Technical Intelligence.
	FM 11–40	Signal Photography.
	FM 20–100	Army Aviation.
	FM 21–5	Military Training.
	FM 21–26	Map Reading.
	FM 21–30	Military Symbols.
	FM 25–10	Motor Transportation, Operations.
[C M]	FM 30–5	Combat Intelligence (u).
	FM 30–15	Examination of Personnel and Documents.
[C]	FM 30–16	Technical Intelligence (u).
[C M]	FM 30–19	Order of Battle Intelligence.
	FM 30–101	The Maneuver Enemy.
[C M]	FM 30–102	Handbook on Aggressor Military Forces (u).
	FM 30–103	Aggressor Order of Battle.
	FM 30–104	Aggressor Representation.
	FM 55–6	Transportation Service in Theaters of Operations.

	FM 55–10	Movement Control in Theaters of Operation.
	FM 55–21	Rail Transportation Higher Units.
	FM 55–22	Transportation Railway Operating Battalion.
	FM 55–23	Transportation Railway Shop Battalion.
	FM 55–26	Transportation Inland Waterways Service.
	FM 55–31	Highway Transportation Service in Theaters of Operation.
[O]	FM 100–5	Operations.
[O]	FM 100–10	Administration.
	FM 100–15	Larger Units.
	FM 101–5	Staff Organization and Procedure.
	FM 101–10	Organization, Technical, and Logistical Data.
	FM 110–101	Intelligence, Joint Landing Force Manual.
	FM 110–115	Amphibious Reconnaissance.

2. Technical Manuals

	TM 5–231	Mapping Functions of the Corps of Engineers.
	TM 5–240	A Guide to the Compilation and Revision of Maps.
	TM 5–243	Cartographic Aerial Photography.
	TM 5–248	Foreign Maps.

	TM 5–627	Railway Track Maintenance; Repairs and Utilities.
	TM 9–2800	Military Vehicles.
	TM 30–246	Tactical Interpretation of Air Photos.
	TM 55–300	Operation of Transportation Motor Pools.

3. Army Regulations

	AR 55–650	Railroads.
	AR 117–5	Mapping and Surveying.
	AR 380–5	Safeguarding Security Information.
[C]	AR 381–25	Army Intelligence Collection Instructions (u).

4. Special Regulations

	SR 10–5–1	Department of the Army.
	SR 10–120–1	Department of the Army—Office of the Assistant Chief of Staff, G–2, Intelligence.
	SR 10–355–1	Office of the Chief of Transportation.
[C]	SR 11–10–50	[Classified].
	SR 117–5–1	Mapping and Surveying.

5. Tables of Organization and Equipment

	TOE 5–500R	Engineer Service Organization.
	TOE 30–600C	Military Intelligence Service Organization.
	TOE 55–500R	Transportation Service Organization.

6. USMC Amphibious Manuals

	AM–2	Terrain, Hydrography, and Weather.

7. Department of the Army Pamphlets

[C]	DA Pam 30–100	Telecommunications (u).

APPENDIX VI

ROTARY AND FIXED-WING AIRCRAFT INFORMATION REQUIREMENTS AND REPORTING CHECKLISTS

1. General Information

a. A critical estimate of rotary and fixed-wing aircraft, their economic importance, potential for military use, and relationship to other modes of transportation.

b. Brief history of the rotary and fixed-wing aircraft industry and its development.

c. Capabilities of commercial air transport companies utilizing rotary and fixed-wing aircraft.

d. Inventory of rotary and fixed-wing aircraft, including number, types, and characteristics.

e. Location of aircraft observed within the country and the number observed at any one time.

f. Procurement policies and procedures of military ground force units in the acquisition of rotary and fixed-wing aircraft.

g. Doctrine.

(1) Present and planned tactical doctrine for the use of rotary and fixed-wing aircraft in ground force units.

(2) Military agencies responsible for developing doctrine for the employment of

rotary and fixed-wing aircraft. (Include individual names, biographic notes, etc.)

(3) Effects or influence of atomic warfare on current concepts of aircraft operations in the combat zone.

h. Command or control of rotary- and fixed-wing aircraft.

(1) By whom exercised within each arm or service.

(*a*) Normal conditions.

(*b*) Emergency conditions.

(2) Employment.

(*a*) Individually, in groups, or in mass.

(*b*) Type—reconnaissance; transport of troops and cargo; medical evacuation; command, courier, or liaison; chemical, biological, or radiological warfare (in either a dispensing or detection role); utility purposes such as aerial wirelaying, etc

(*c*) Identification markings, including those used for medical evacuation.

(*d*) Use of rotary-wing aircraft in night flights; if used, the extent and purpose.

(*e*) Use of rotary-wing aircraft in ship-to-shore operations.

(*f*) Special techniques of employment.

i. Organization and training.

(1) Organizational structure, including table of organization and equipment.

(2) Type, number, and location of aircraft units. (Include types, number, and characteristics of equipment.)

(3) Aircraft assignments—in support of ground units or attached on a permanent basis.

(4) Types of special equipment used with aircraft, such as cargo loading and/or unloading devices, radio or electronic equipment, cargo hoists or slings, external carrying devices, litter pods for medical evacuation, aerial photo or infrared equipment, and radio or electronic equipment.

(5) Publications (organization, operation, training, maintenance, etc.).

(6) Location of schools for training pilots and mechanics.

(*a*) Length of course.

(*b*) Types of aircraft used in training.

(*c*) Flying hours required to complete training (presolo phase, intermediate phase, advanced phase).

(*d*) Qualification, if any, of students for rotary-wing pilot training in fixed-wing aircraft.

(*e*) Sources for pilot and mechanic students.

(*f*) Evaluation of the training program.

(*g*) Training of ground troops in loading or unloading helicopters.

(*h*) Training exercises by aircraft units, either alone or with other air or ground units.

(*i*) Frequency of accidents and their causes.

j. Supply and maintenance.

(1) Organizational structure for supply and maintenance.
(2) Critical items of supply or maintenance.
(3) Average life in flying hours of propellers, rotor blades, engines, transmissions, and other critical items.
(4) Extent to which aircraft unit performs its own maintenance in the field.
(5) Days of supply carried with each unit.
(6) Ratio of maintenance hours to flying hours.
(7) Maintenance procedure employed (by number of flying hours, by calendar, or as needed).
(8) Major causes for need of maintenance.
(9) Maintenance difficulties and man-hours required to perform routine or periodic inspections or maintenance tasks.
(10) Location and characteristics of facilities for maintenance and/or production of aircraft and spare parts.

k. Research and development.

(1) Current trends, policies, and procedures in research and development.
(2) Types of aircraft in the research and development stage.
(3) Characteristics, capabilities, and limitations of these aircraft with regard to flight characteristics and load-carrying ability.
(4) Names, background, and significant details of individuals connected with this program.

l. Facilities and construction.

(1) Location and characteristics of airfields, to include number, size, and location of hangars; number, length, width, type, and condition of runways and taxiways.
(2) Organizations responsible for airfield construction and maintenance.
(3) Availability of equipment for construction and maintenance (to include snow clearance).
(4) Availability of field lighting, fire fighting, and rescue equipment.
(5) Traffic control system and navigational aids.
(6) Materials handling equipment.
(7) Maintenance facilities for aircraft.

m. Personnel—aviation units.

(1) Military.
  (*a*) Number of officers.
  (*b*) Number of enlisted men.
  (*c*) Degree of training.
  (*d*) Morale.
(2) Civilian.
  (*a*) Number.
  (*b*) Proficiency.
  (*c*) Reserve training status.

2. Technical Data on Individual Aircraft

a. Number available and types (reconnaissance and observation, cargo, utility, liaison, command, etc.).

b. Production capabilities.

c. Mobilization capabilities.

d. Make and model (experimental, service test, or production).

e. Characteristics.

(1) Power plants.

(*a*) Number.

(*b*) Location.

(*c*) Type (internal combustion, jet, turbine, rocket, etc.).

(*d*) Horsepower.

(*e*) Carburetors, air filters, engine cooling, etc.

(*f*) Propeller diameter.

(2) Diameter, number, location, direction, and plane of rotation(s) of rotor systems on rotary-wing aircraft.

(3) Number and construction type of rotor blades.

(4) Types of deicing equipment, if any, for rotor blades or other components.

(5) Type of landing gear.

(*a*) Fixed.

(*b*) Retractable.

(*c*) Type (wheels, skids, floats, etc.).

(6) Type and number of transmissions, including free-wheeling devices and power takeoff.

(7) Empty and gross weights.

(8) Armament.

(9) Fuel type and capacity.

(10) Lifting surfaces.

(*a*) Rotors (single, tandem, etc.).

(*b*) Rotors and stub wings.

(*c*) Wing span, area, thickness, shape, taper ratio, etc.

(*d*) Construction of flaps, brakes, spoilers, etc.

(11) Method and ease of control.

(12) Control surfaces.

(*a*) Vertical fins.

(*b*) Rudders.

(*c*) Elevators and ailerons, etc.

(13) Fuselage.

(*a*) Design.

(*b*) Construction type (strength, materials).

(*c*) New developments.

(*d*) Overall dimensions (length and height).

(14) Maintenance policies, procedures, etc. (ease of maintenance, special equipment required, etc.).

(15) Radio equipment by model.

(*a*) Transmitter.

(*b*) Receiver.

(*c*) Other electronic equipment.

(16) Cockpit arrangement (instrumentation, IFF, etc.).

(17) Location and size of cargo or passenger compartments.

(*a*) Length.

(*b*) Width.

(*c*) Height.

(*d*) Cube.

(*e*) Restrictions (floor loading).

(*f*) Center of gravity.

(*g*) External cargo facilities (litters, etc.).

(*h*) Location, number, size, and tensile strength of tie-down ring.

(*i*) Methods of loading (hand, ramp, hoist, elevator, etc.).

(*j*) Type and size of cargo loading doors or ramps.

(18) Provisions for towing.

(19) Takeoff and landing devices.

(*a*) Catapult or assist devices.

(*b*) Retardation devices (arresting gears).

(*c*) Wing folding or other means to increase transportability.

f. Performance data.

(1) Payload (passengers and/or cargo).

(2) Crew number.

(3) Cruising and maximum speed.

(4) Cruising radius or range.

(5) Ceiling.

(6) Rate of climb.

(7) Takeoff distance.

(8) Maximum altitude.

(9) Autorotational (forced-landing) capabilities and characteristics.

(10) Angles of approach and takeoff.

(11) Effects of high altitude or mountain operations.

(12) Cold-weather starting and operations.

(13) All-weather flight provisions.

g. Materials used on aircraft.

h. Photos, sketches, and drawings (see figs. 31–34).

3. Suggested Sources

a. Charts, technical manuals, field manuals,

tables of organization and equipment, organizational tables, or other documents showing organization, mission, functions, and/or responsibilities of each technical service with regard to the utilization of aircraft in ground force units.

b. Army, Navy, or Air Force reports, records, documents, texts, plans, or brochures indicating aircraft inventories or registrations, current doctrine, control, organization, research and development, and other procedures for the employment of aviation in the ground forces.

c. Ministry of aviation, ministry of communications, State Department, Department of Commerce, or other government reports indicating the number, types, use, and importance of both military and civilian aviation.

d. Aircraft and/or equipment manufacturers' handbooks, manuals, catalogs, etc. This type of document normally indicates types and performance data of both military and civilian aircraft.

e. Research and development plans and reports or other technical and scientific publications.

f. Aircraft registers or inventories showing number, types, and characteristics.

g. Design and construction standards. Basic standards for design and construction of Army-type airfields and heliports may be found in engineering texts, pamphlets, and/or government publications such as technical manuals, field manuals, etc.

h. Airfield construction plans and progress reports.

i. Military status reports and/or documents in-

dicating maintenance policies and procedures used for Army-type airports and heliports.

j. Aerial and ground photographs of aircraft and facilities.

k. Aeronautical charts, maps, graphs, etc.

l. Newspapers, aviation magazines, or other current periodicals.

m. Bills of materials.

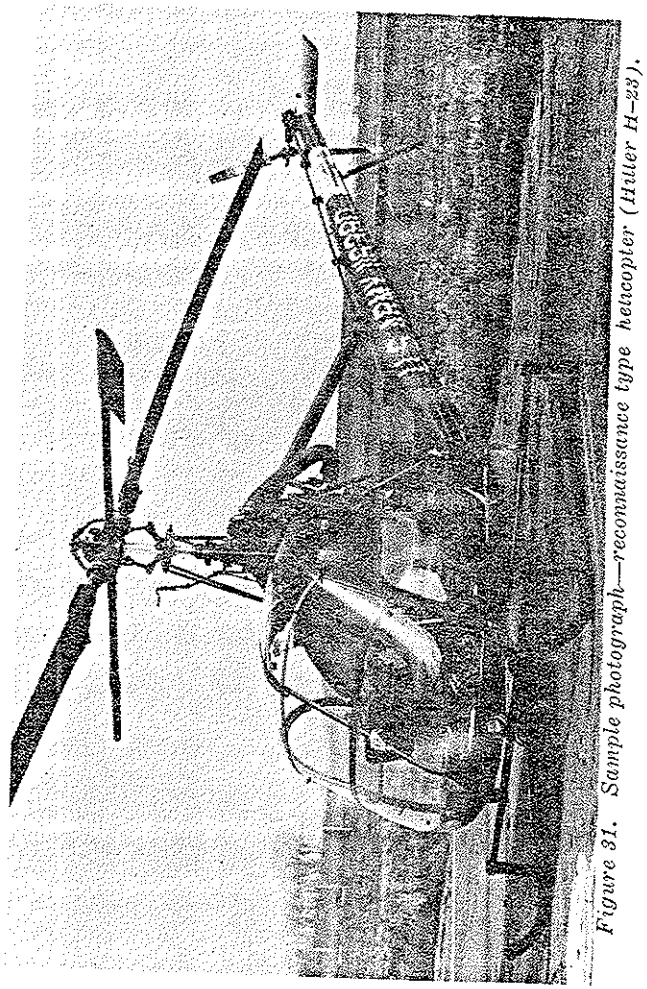

Figure 31. Sample photograph—reconnaissance type helicopter (Hiller H–23).

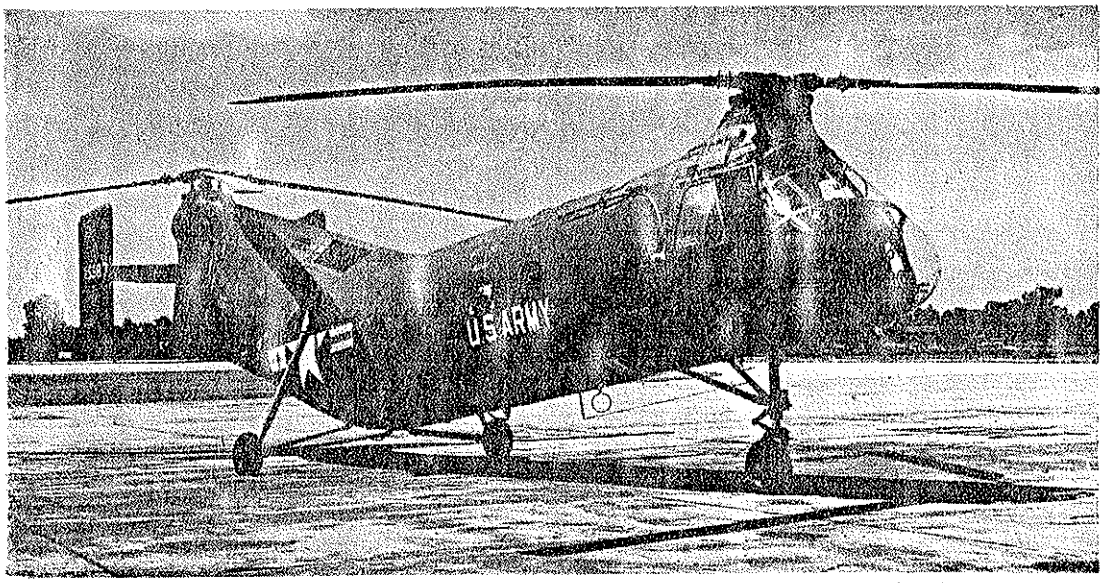

Figure 32. Sample photograph—cargo type helicopter (Piasecki H–21).

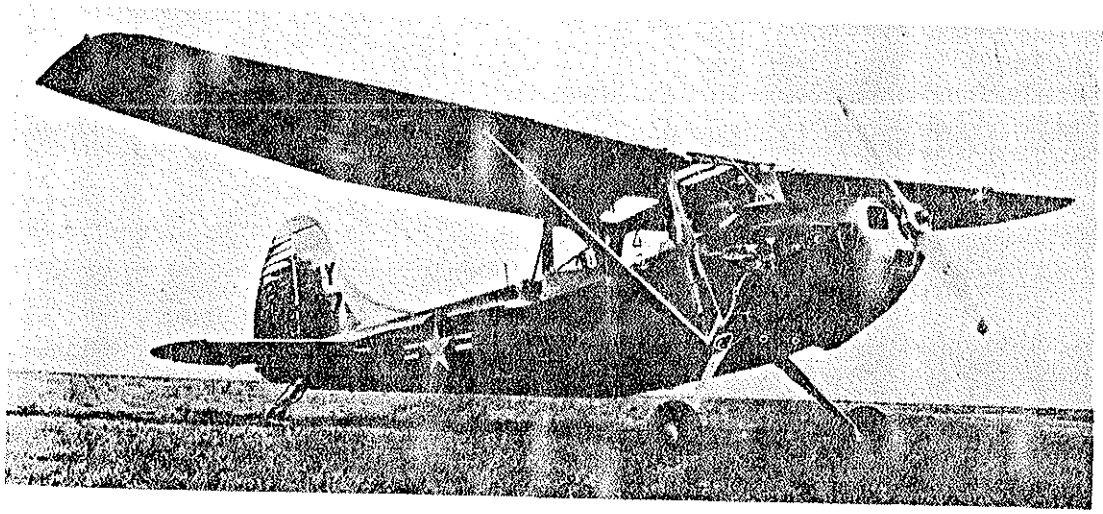

Figure 33. Sample photograph—observation and reconnaissance type aircraft (Cessna L–19).

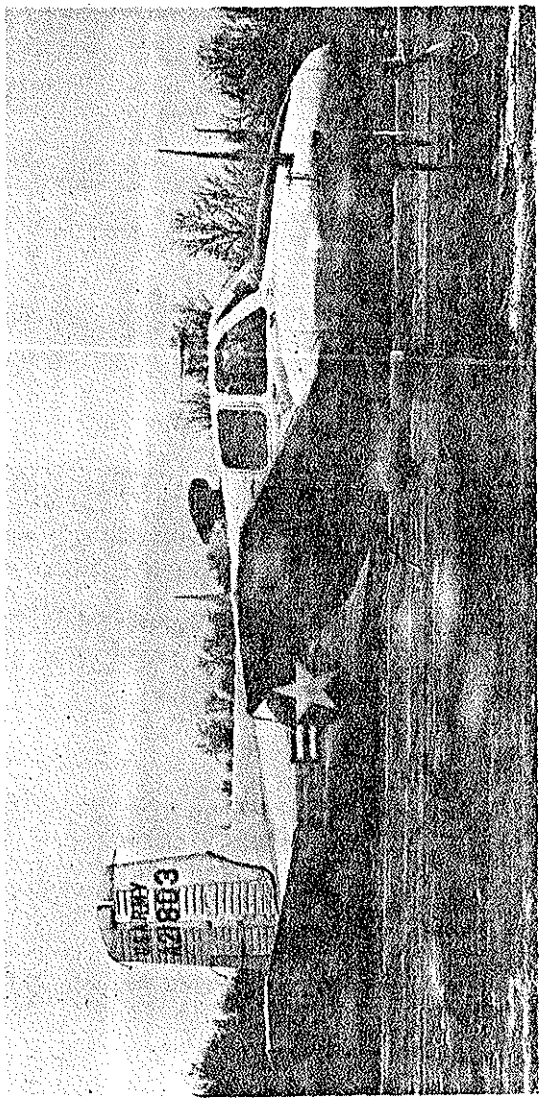

Figure 34. Sample photograph—liaison and command type aircraft (Beech L–23).

APP

DEFINITIONS OF TE
OF EQUIPME

1. General

It is imperative th
personnel have know
in describing the c
the various modes
zation of such term
form reports, in a
more complete assi
ner. Department of
manuals and other
to, when necessary
used in reporting w
those utilizing the
intelligence. Some
used in connection
transportation and
and equipment and
101–10, FM 5–10,

2. Railroads and T

Ballast—Selected
bed to hold t
ally consists o
in tamping, w
well, and resi

rectly to the unit rather than to a depot or dump.

Useful load—The weight of the gas, oil, crew, passengers, baggage, and/or cargo.

Vmax—Maximum safe speed at which aircraft may operate under given conditions.

Weight (empty)—The weight of the aircraft with all its necessary parts, not including useful load.

Weight (gross)—The weight of the aircraft with all the load it is intended to carry.

Wing loadings—Aircraft airborne weight divided by wing area.

[AG 350.09 (19 May 55)]

By Order of *Wilber M. Brucker*, Secretary of the Army:

MAXWELL D. TAYLOR,
General, United States Army,
Chief of Staff.

Official:

JOHN A. KLEIN,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

CNGB (1)
Tec Svc, DA (2)
Hq CONARC (5)
OS Maj Comd (2)
OS Base Comd (5)
Log Comd (2)
MDW (2)
Armies (1)
Corps (3)
Div (2)
Trans Gp (2)
Trans Bn (2)
Trans Co (2)
Ft & Cp (2)
Gen & Br Svc Sch (5) except Trans Sch (25)
USMA (2)
PMST (1)
Trans Terminal Comd (2)
Army Terminal (2)

NG: State AG (6); units—same as Active Army.

USAR: Same as Active Army.

For explanation of abbreviations used, see SR 320–50–1.

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